TM-360
Public Address Amplifier
Operating Manual

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Important Safety Instructions
Consignes de sécurité à lire atten-

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons. The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance instructions in the literature accompanying the device.

Le symbole de la flèche dans un triangle équilateral symbolisant la foudre est prévu pour sensibiliser l'utilisateur à la présence de tension de voltage non isolée à l'intérieur de l'appareil. Elle pourrait constituer un danger de risque de décharge électrique pour les utilisateurs. Le point d'exclamation dans le triangle équilatérale alerte l'utilisateur de la présence de consignes qu'il doit d'abord consulter avant d'utiliser l'appareil.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
6. Do not use this apparatus near water.
7. Clean only with dry cloth.
8. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
9. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus.
10. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
11. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
12. Only use attachments/accessories specified by the manufacturer.
13. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
14. Unplug this apparatus during lightning storms or when unused for long periods of time.
15. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

1. Lisez ces instructions.
2. Conservez ces instructions.
3. Observez les avertissements.
4. Suivez ces instructions.
5. Pour réduire le risque de feu ou la décharge électrique, ne pas exposer cet appareil pour pleuvoir ou l'humidité.
6. Ne pas utiliser l'appareil près de l'eau.
7. Le nettoyer à l'aide d'un tissus sec.
8. Ne pas bloquer les ouvertures de ventilation, installer selon les consignes du fabricant.
9. Eloigner des sources de chaleur tel: radiateurs, fourneaux ou autres appareils qui produisent de la chaleur.
10. Ne pas modifier ou amputer le système de la mise à terre. Une prise avec mise à terre comprend deux lames dont une plus large ainsi qu'une mise à terre: ne pas la couper ou la modifier. Si la prise murale n'accepte pas la fiche, consulter un électricien pour qu'il remplace la prise désuète.
11. Protéger le cordon de secteur contre tous bris ou pincement qui pourraient l'endommager, soit à la fiche murale ou à l'appareil.
12. N'employer que les accessoires recommandés par le fabricant.
13. N'utiliser qu'avec les systèmes de fixation,chariots, trépied ou autres, approuvés par le fabricant ou vendus avec l'appareil.
14. Débrancher l'appareil lors des orages électriques ou si inutilisé pendant une longue période de temps.
15. Un entretient effectué par un centre de service accrédité est exigé si l'appareil a été endommagé de quelque façon: si il a été exposé à la pluie,, l'humidité ou s'il ne fonctionne pas normalement ou qu'il a été échappé.

FCC Compliance

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference
2. This device must accept any interference received, including interference that may cause undesired operation.

WARNING:
THIS APPARATUS MUST BE EARTHED

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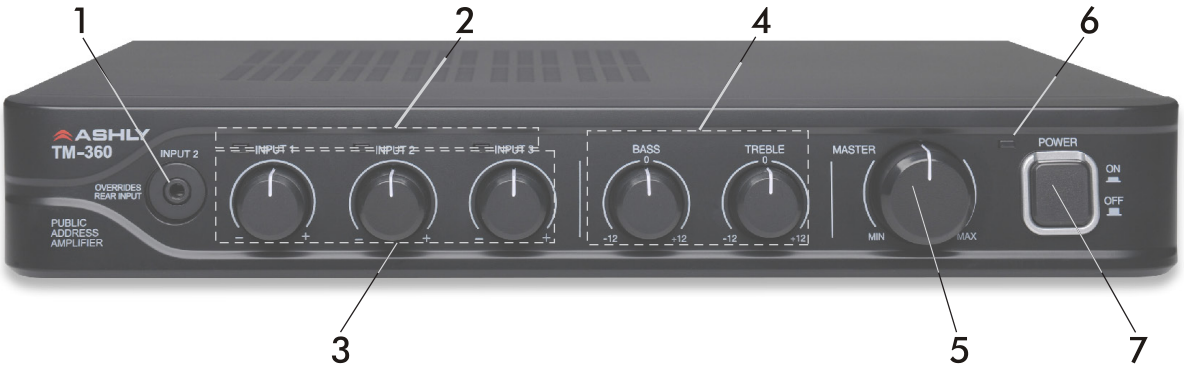
❑ Overview

The Ashly TM-360 is a table-top mixer and 60W mono amplifier suitable for applications that require background music with priority paging from a single microphone. Features include:

- Mic/line input with switchable phantom power plus two additional line level inputs.
- Mic/line input can have priority over line input 2, input 2 can have priority over line input 3.
- 60 watt speaker output with 4Ω, 70V, and 25V taps.
- 230V export version has 60 watt speaker output with 4Ω, 70V, and 100V taps.
- Second zone output with a 1W 8Ω output and a balanced 600Ω output.
- Independent 600Ω PRE output.
- Euroblock connectors on all inputs and outputs.
- Line inputs also use summed mono dual RCA jacks.
- Rear panel DIP switch for zone 2 assignment, input priority, mute link status, low cut filter, and phantom power.
- Power saving standby mode triggered by audio inactivity or contact closure.
- Limited five year warranty
- Safety/Compliance: cCSAus, CE, FCC, RoHS



❑ Front Panel Features

1) Input 2 Jack

This is a 3.5mm Tip Ring Sleeve (TRS) jack on the front panel that drives input 2. This jack is very useful for connecting MP3 players, and overrides all input 2 connections on the back panel.

2) Input Signal LEDs

These LEDs flash when input signal is present.

3) Input Level Controls

These control the level of the three input channels.

4) Bass and Treble Controls

These control the bass and treble of the main amplifier output.

5) Master Volume Control

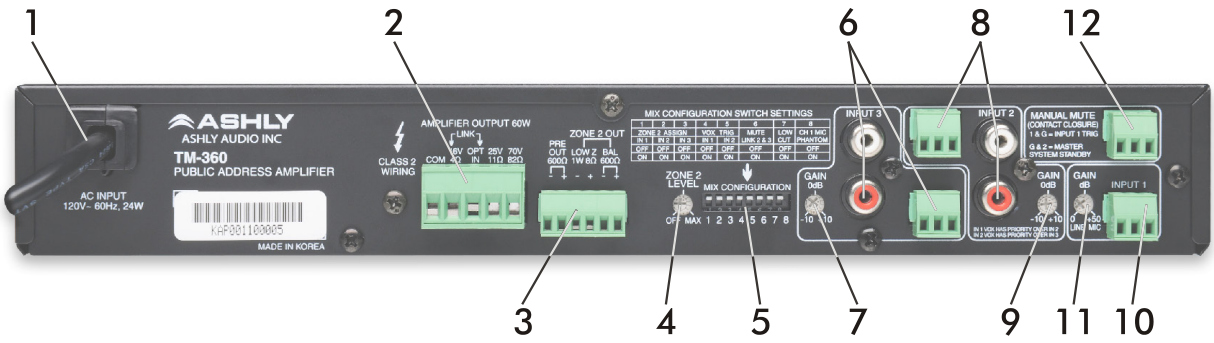
This controls the main amplifier output level. There is a separate rear panel level control for zone 2 output.

6) Power LED

This LED lights blue when the unit is powered on and active, and red when in standby mode.

7) Power Switch

This switch turns the power on or off



❑ Rear Panel Features

1) AC Mains

This is the AC cord for connecting to 120VAC mains, 60Hz, 24W.

2) Main Speaker Outputs

This 5.08mm Euroblock connector is used for the main speaker output wiring. For low impedance speaker loads, minimum 4Ω, connect between the COM and 16V/4Ω pins. For 25V or 70V speaker loads (70V and 100V output taps on 230VAC models), the LINK wire must *first* be installed between the 16V/4Ω pin and OPT IN pin, then connect the speaker load between COM and 25V or 70V pins.

3) Zone 2 and Preamp Outputs

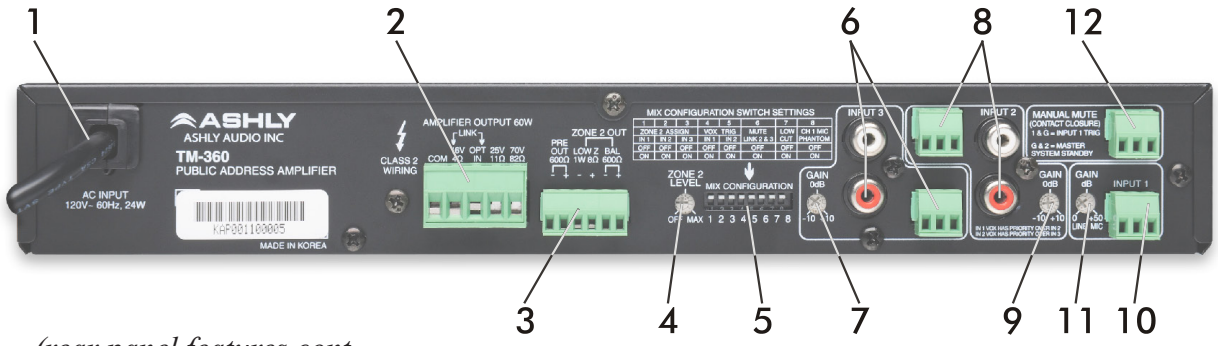
In addition to the main 60 Watt amplifier output, there is a separate ZONE 2 output which is a switch selectable mix of channels 1, 2, or 3. This output is not effected by the priority ducking/mute action or by the bass/treble EQ controls.

The ZONE-2 output provides two signals; 1) a low impedance output that is capable of continuously driving 1 Watt into an 8 Ohm loudspeaker, and 2) a 600 Ohms transformer balanced output. Zone 2 output is controlled by the rear panel Zone 2 level control, as well as the three channel assign DIP switches.

The PRE OUT connection is used for driving additional external devices with the same signal that drives the main TM-360 power amplifier. The PRE OUT 600Ω output signal is taken before the master volume control.

4) Zone 2 Level Control

This controls the level of the Zone 2 output signal.



(rear panel features cont. .

5) Mix Configuration DIP Switches

Switches 1, 2, and 3: Zone 2 Assign

These assign each input to Zone 2 output, post-level control. There is no effect to the main output mix.

Switches 4-5: VOX Trigger -

The TM-360 has the ability to trigger a mute on channel 2 or 3 from the presence of an audio signal on channel 1 or 2. This is called Voice Operated Switching, or VOX. Input 2 has priority over input 3, and input 1 has priority over input 2. Input 1 also has the ability to use a contact closure trigger such as a mic push-to-talk switch for priority muting of channel 2. Additionally, input 1 can be set to have priority over both inputs 2 and 3 together (see switch 6).

The TM-360 has audio detecting LEDs on each input. When the VOX TRIG switches are set to ON for inputs 1 or 2, the same signal level which activates the LED is used as the VOX trigger. VOX mutes the dependent channel until the trigger signal falls back below the LED threshold. Each input features a rear panel gain trim that first optimizes the overall input sensitivity for each input, but can also serve to fine-tune the sensitivity of the signal detector which creates the VOX trigger point for each input.

Switch 6: Mute Link 2&3

When this switch is turned on, it sets the channel 1 VOX trigger *or* Manual Mute contact closure to mute both channels 2 and 3. If only channel 2 is to be affected, leave it off.

Switch 7: Low-Cut Filter

This switch turns on a 400Hz 6dB/oct low-cut filter affecting the main and PRE outputs but not the zone 2 outputs. This is useful for providing the proper EQ for paging horns.

Switch 8: CH 1 MIC Phantom Power

This provides +18V phantom power to input 1 for use with condenser and electret microphones.

6) Input 3 Connectors

3.5mm Euroblock connectors and summed stereo RCA jacks are used for input 3. If wiring an unbalanced input signal into a balanced Euroblock input, be sure to ground the (-) input pin.

7) Input 3 Gain Control

Input 3 gain trim range is adjustable from -10dB to +10dB

8) Input 2 Connectors

3.5mm Euroblock connectors and summed stereo RCA jacks are used for input 2. If wiring an unbalanced input signal into a balanced Euroblock input, be sure to ground the (-) input pin.

9) Input 2 Gain Control

Input 2 gain trim range is adjustable from -10dB to +10dB. This control is also used to fine tune the signal threshold that will trigger the muting of input 3.

10) Input 1 Connector

A 3.5mm Euroblock connector is used for input 1, and can be used as a mic level or line level input. As a balanced line input, it can connect to a telephone paging system instead of a microphone. If the input signal is unbalanced, be sure to ground the unused (-) input pin.

11) Input 1 Gain Control

Input 1 gain trim range is adjustable from 0dB to +50dB. A typical line level input setting would be close to 0dB. A typical Microphone input setting would be closer to +50dB. This control is also used to fine tune the signal threshold that will trigger the muting of input 2 (or inputs 2 and 3 if linked.

12a) Manual Mute Contact Closure

Contact Closure between pins 1 and G will mute input channel 2, or mute channels 2 and 3 together if they are linked using mix configuration switch #6. This is typically used when a microphone plugged into channel 1 has a push-to-talk switch, whereby the pressing of the switch not only turns on the mic but also mutes the signal on channel 2, or channels 2 and 3 if they are linked. When the switch is released, the signal on channels 2 and 3 returns.

12b) Master System Standby

The TM-360 has a power saving standby mode which can be triggered by 25 minutes of audio inactivity, or by contact closure of the Master System Standby connector pins G & 2. When in standby mode, the front panel power LED will turn red, changing back to blue for normal operating mode. Standby mode is ended when there is audio signal present again, or when the Master System Standby circuit is opened. Master system standby has priority over standby due to inactivity.

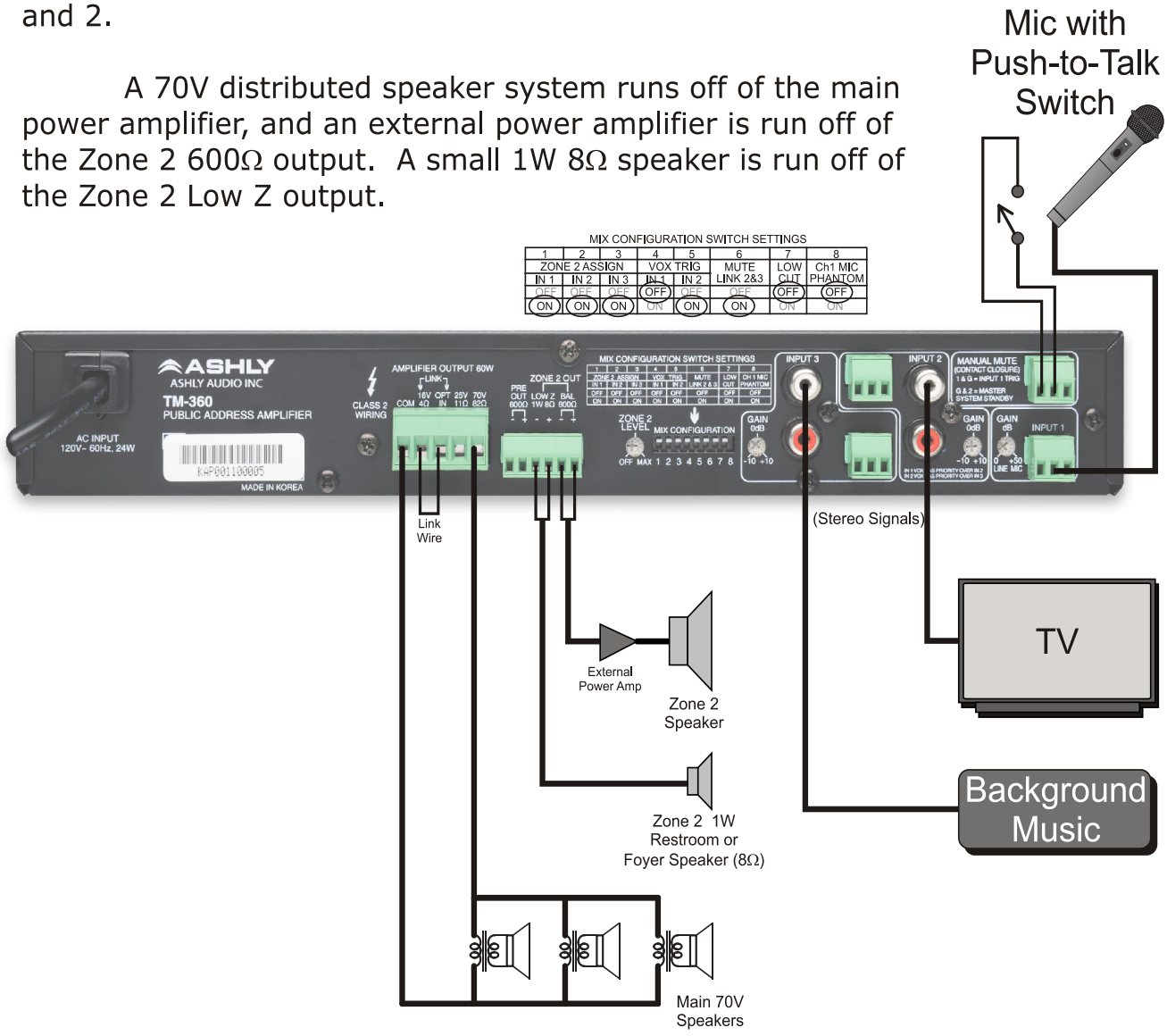
❑ Typical Application

Restaurant system

This two tiered priority ducking example allows for background music to be present on channel 3, which can be overridden by the presence of audio on channel 2 from a TV signal, both of which can be overridden by a keyed microphone announcement on channel 1. Stereo audio signals using RCA jacks are summed to mono at the input.

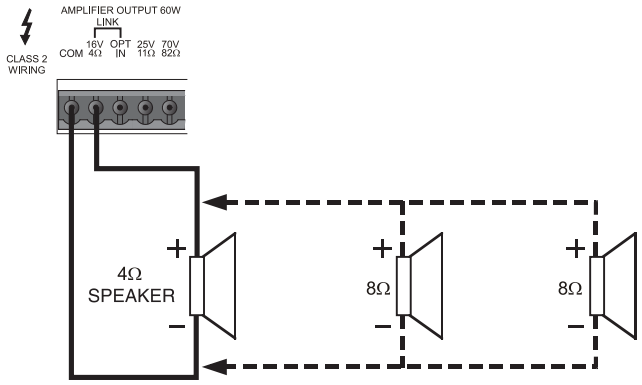
In this example, all three inputs are assigned to Zone 2 via the DIP switches. Because the mic is set up for push-to-talk, the IN 1 VOX trigger switch is left off. IN 2 VOX trigger is switched on however, so that signal from the TV will automatically override the background music. Mute Link is switched on so that the keyed mic will mute both Inputs 1 and 2.

A 70V distributed speaker system runs off of the main power amplifier, and an external power amplifier is run off of the Zone 2 600Ω output. A small 1W 8Ω speaker is run off of the Zone 2 Low Z output.



❑ Speaker Wiring

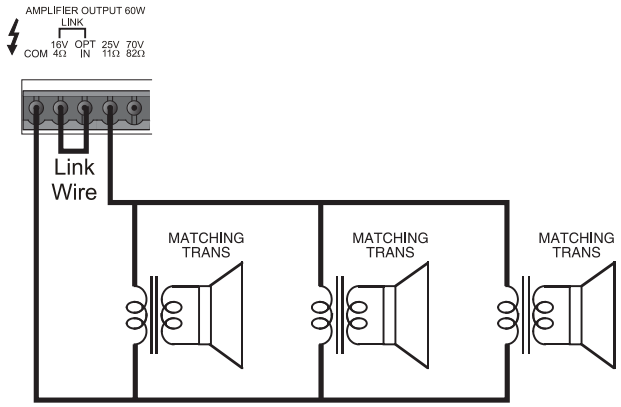
4Ω Speaker Wiring (60W max)



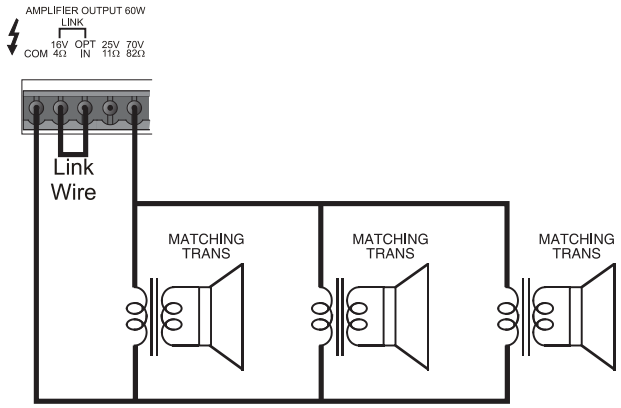
Minimum Load 4Ω

Two 8Ω Speakers in Parallel = 4Ω

25V Speaker Wiring (60W max)

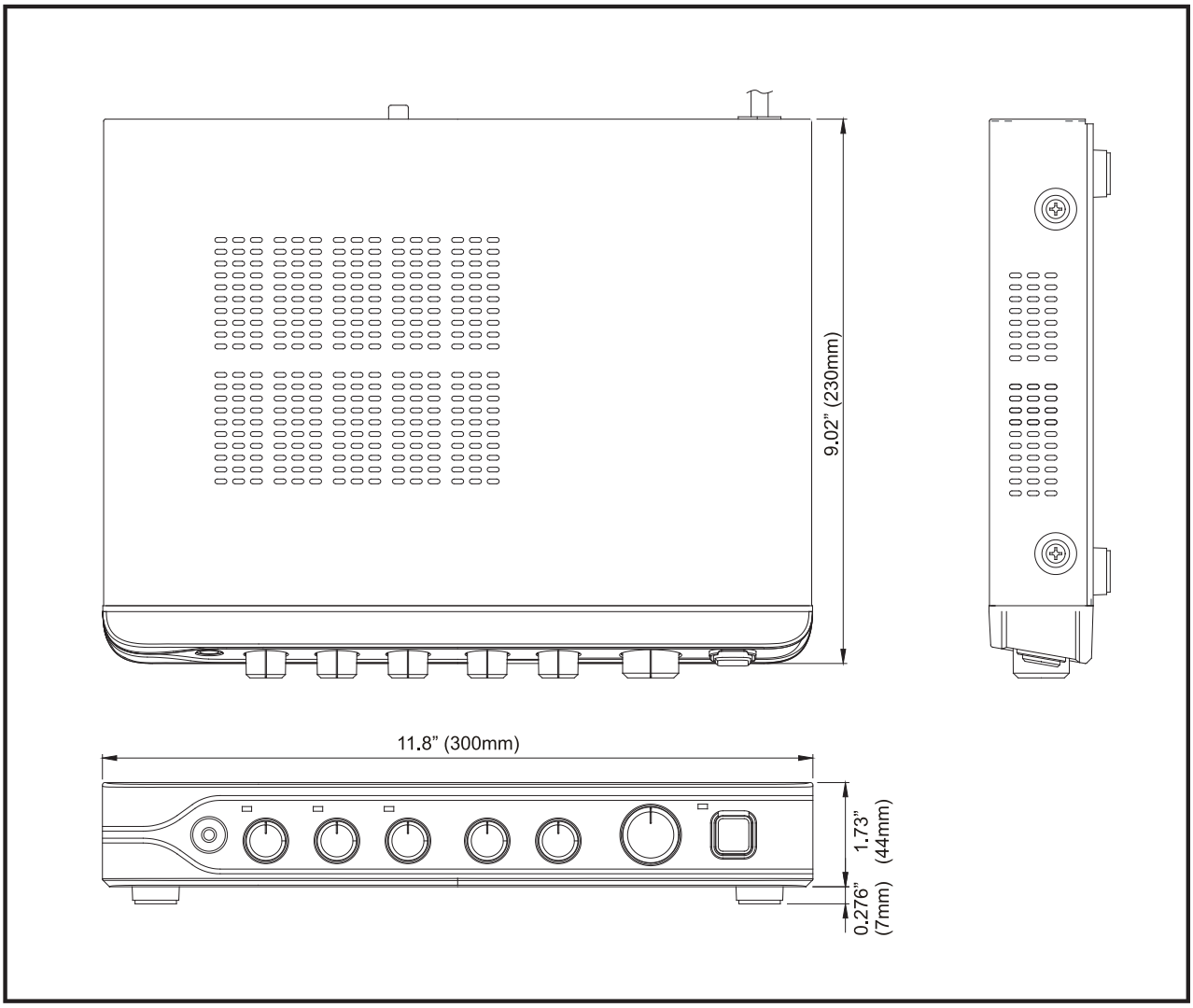


70V Speaker Wiring (60W max)

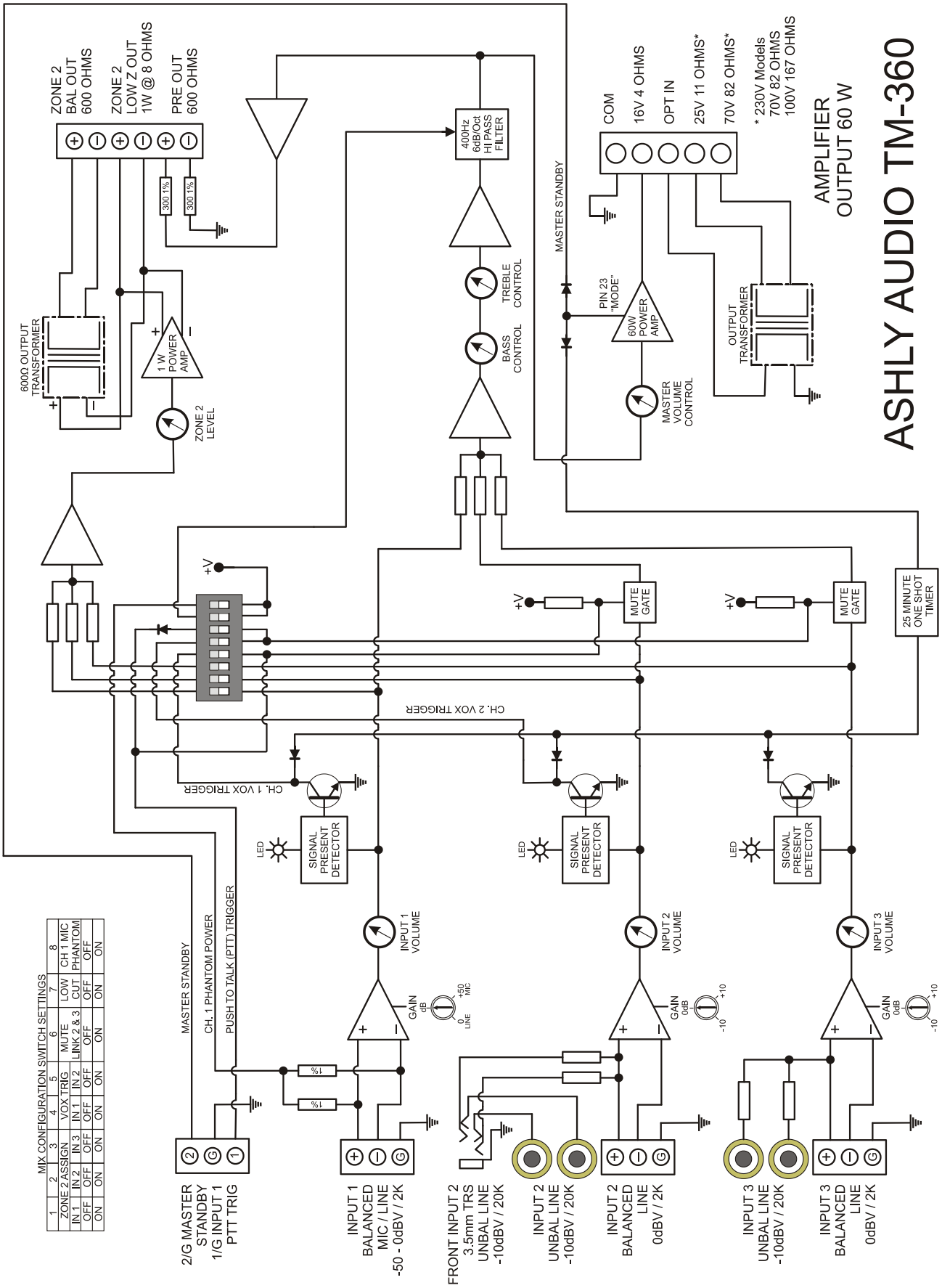


1) Low Z (4Ω), 25V, and 70V speaker loads should not be wired in combination with each other.
2) Remove power prior to making speaker connections
3) Use Class 2 Wiring.

❑ Dimensions



❑ Schematic Block Diagram



MIX CONFIGURATION SWITCH SETTINGS

1	2	3	4	5	6	7	8
ZONE 2 ASSIGN			VOX TRIG		MUTE	LOW	CH 1 MIC
IN 1	IN 2	IN 3	IN 1	IN 2	LINK 2 & 3	CUT	PHANTOM
OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
ON	ON	ON	ON	ON	ON	ON	ON

❑ Specifications

		TM-360		
Rated Output Power (THD 1%)		60W (RMS)		
Output Voltage /Impedance	USA/CANADA & Associated	4Ω/15.5V	10.4Ω/25V	82Ω/70V
	EC & Associated, JAPAN	4Ω/15.5V	82Ω/70V	167Ω/100V
Frequency Response (1W@1KHz)	Input 1, 2, 3	+1/-3dB, 80Hz-15kHz		
THD (60W @ 1kHz)		< 1%		
S/N Ratio (60W@1KHz A-weighted)	Input 1, 2, 3	>80dB		
Input Sensitivity	Input 1	-10dBV to -50dBV		
	Input 2, 3	0dBV to -20dBV		
Tone Control	Treble (10kHz)	±10dB		
	Bass (100Hz)	±10dB		
Residual Noise (Input 1-3 vol min, tone at center)		Master volume min	-72dB	
		Master volume max	-57dB	
Zone 2 Output		Rated power 8Ω (RMS, THD 3%)	1W	
		Bal 600Ω	2.4V	
PRE Out (input -10dBV)		0dBV		
Mix Configuration Switches		SW1	Zone 2 Assign Input 1	
		SW2	Zone 2 Assign Input 2	
		SW3	Zone 2 Assign Input 3	
		SW4	VOX Trigger Input 1	
		SW5	VOX Trigger Input 2	
		SW6	Mute Link Input 2 & 3	
		SW7	Low-Cut, 400Hz 6dB/Oct.	
		SW8	Ch1 Phantom Power, +18V	
Manual Mute Contact Closure		Pins 1 & G = Input 1 Mute Trigger		
Master System Standby Contact Closure		Pins G & 2 = Power Standby		
AC Requirements		120VAC, 60Hz, 24W (USA & Canada and Associated) 230VAC, 50/60HZ, 24W (EC and Associated, Japan)		
Line Current Draw (120VAC 60Hz) (For 230VAC models,divide line current draw values by 2)		Standby	0.15A	
		Idle	0.24A	
		1/8th Power Pink Noise	0.38A	
		1/3th Power Sine Wave	0.66A	
Thermal Dissipation (BTU/hr)		Standby	26	
		Idle	43	
		1/8th Power Pink Noise	53	
		1/3th Power Sine Wave	75	
Environmental		40ºF ~ 120ºF (4° ~ 49°C) non-condensing		
Weight		8.6lb (3.9kg)		
Dimensions		11.8”W x 2”H x 9.02”D (300mm x 51mm x 230mm)		

* Specifications and design subject to change without notice. Note: 0dBV = 1V

Ashly Audio Inc. LIMITED WARRANTY (USA ONLY)

(Other countries please contact your respective distributor or dealer)

For units purchased in the USA, warranty service for this unit shall be provided by ASHLY AUDIO, INC. in accordance with the following warranty statement.

ASHLY AUDIO, INC. warrants to the owner of this product that it will be free from defects in workmanship and materials for a period of FIVE years from the original-date-of-purchase. ASHLY AUDIO INC. will without charge, repair or replace at its discretion, any defective product or component parts upon prepaid delivery of the product to the ASHLY AUDIO, INC. factory service department, accompanied with a proof of original-date-of-purchase in the form of a valid sales receipt. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

EXCLUSIONS: This warranty does not apply in the event of misuse, neglect, or as a result of unauthorized alterations or repairs made to the product. This warranty is void if the serial number is altered, defaced, or removed. ASHLY AUDIO, INC. reserves the right to make changes in design, or make additions to, or improvements upon, this product without any obligation to install the same on products previously manufactured.

Any implied warranties, which may arise under the operation of state law, shall be effective only for FIVE years from the original-date-of-purchase of the product. ASHLY AUDIO, INC. shall be obligated to only correct defects in the product itself. ASHLY AUDIO, INC. is not liable for any damage or injury, which may result from, or be incidental to, or a consequence of, such defects. Some states do not allow limitations on how long an implied warranty lasts, or the exclusion, or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

OBTAINING WARRANTY SERVICE:

For warranty service in the United States, please follow this procedure:

1) Return the product to ASHLY AUDIO, INC. freight prepaid, with a written statement describing the defect and application that the product is used in. ASHLY AUDIO, INC. will examine the product and perform any necessary service, including replacement of defective parts, at no further cost to you.

2) Ship your product to:

ASHLY AUDIO, INC.
Attention: Service Department
847 Holt Road
Webster, NY 14580-9103

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